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Nota di contenuto	Preface; Contents; Introduction to Flexoelectricity: Its Discovery and Basic Concepts R.B. Meyer; References; 1. Molecular Theory of Flexoelectricity in Nematic Liquid Crystals M.A. Osipov; 1.1. Introduction; 1.2. Dipolar and Quadrupolar Flexoelectricity; 1.3. Density Functional Theory of Flexoelectricity; 1.4. Influence of Polar Molecular Shape on the Flexocoecients; 1.5. Influence of Dipole-Dipole Correlations; 1.6. Influence of Real Molecular Shape; References; 2. Flexoelectro-optics and Measurements of Flexocoeficients N.V. Madhusudana; 2.1. Introduction; 2.2. Theoretical Background 2.3. Experimental Techniques2.4. Some Remarks on the Experimental Results; References; 3. Flexoelectricity of Bent-core Molecules A. Jakli, J. Harden and N. Eber; 3.1. Introduction; 3.1.1. Bent-core (banana-shaped) liquid crystals; 3.1.2. Bent-core nematics; 3.2. Flexoelectricity in Bent-core Liquid Crystals; 3.2.1. The .exoelectric coefficients; 3.2.2. A direct flexing method for measuring flexoelectric coefficients; 3.2.3. Giant flexoelectricity of bent-core nematics studied by the flexing method; 3.3. The Inverse (Converse) Flexoelectric Effect; 3.3.1. Converse giant flexoelectric effect

3.3.2. Flexoelectricity of bent-core molecules studied by indirect methods 3.4. Physical Origin of Giant Flexoelectricity; 3.5. Giant Flexoelectric Effect in Liquid Crystalline Elastomers; Acknowledgments; References; 4. The Role of Flexoelectricity in Pattern Formation A. Buka, T. Toth-Katona, N. Eber, A. Krehov and W. Pesch; 4.1. Introduction; 4.2. Equilibrium Structures: Flexodomains; 4.3. Dissipative Structures: Electroconvection; 4.3.1. Standard electroconvection; 4.3.2. Non-standard electroconvection; 4.4. Crossover between Flexodomains and Electroconvection 4.5. Discussions and Conclusions Acknowledgements; References; 5. Flexoelectricity in Chiral Polar Smectics M. Cepic; 5.1. Introduction; 5.2. Ferroelectric Liquid Crystals; 5.2.1. Phenomenological modelling of chiral tilted smectics; 5.2.2. Polar properties and flexoelectricity; 5.3. Antiferroelectric Liquid Crystals; 5.3.1. Structures of phases; 5.3.1.1. The ferroelectric SmC\* phase; 5.3.1.2. The antiferroelectric SmC\* A phase; 5.3.1.3. The incommensurate SmC\* a phase; 5.3.1.4. The antiferroelectric SmC\* FI2 phase; 5.3.1.5. The ferrielectric SmC\* FI1 phase; 5.3.1.6. The six-layer SmC\* 6d phase 5.3.2. Discrete model 5.3.3. Discrete form of flexoelectricity; 5.3.4. Lock-in periodicities; 5.3.4.1. Achiral interactions a1; 5.3.4.2. Achiral interactions a2; 5.3.4.3. Achiral interactions a3; 5.3.4.4. Chiral interactions f1; 5.3.4.5. Chiral interactions f2; 5.3.4.6. Quadrupolar biquadratic interactions bQ; 5.3.4.7. Period two: The SmC\* FI2 phase; 5.3.4.8. Period three: The SmC\* FI1 and the SmC\* 6d phases; 5.4. Flexoelectricity in Complex Structures; 5.4.1. General direction of polarization; 5.4.2. On the observability of flexoelectric polarization; 5.5. Conclusions; References 6. Flexoelectricity in Lyotropics and in Living Liquid Crystals A.G. Petrov

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#### Sommario/riassunto

The book intends to give a state-of-the-art overview of flexoelectricity, a linear physical coupling between mechanical (orientational) deformations and electric polarization, which is specific to systems with orientational order, such as liquid crystals. Chapters written by experts in the field shed light on theoretical as well as experimental aspects of research carried out since the discovery of flexoelectricity. Besides a common macroscopic (continuum) description the microscopic theory of flexoelectricity is also addressed. Electro-optic effects due to or modified by flexoelectricity as we

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Nota di contenuto	The use of technological tools for children with autism spectrum disorder, Cristina Costescu -- Shaping executive functions of children with NDDS through digital technologies, Cristina Costescu, Carmen David, Adrián Roa -- Using eye-tracker, wearables, and game analytics in VR applications for autism, Gerardo Herrera Gutierrez, Patricia PérezFuster -- The utility of biomarkers for assessment and intervention in neurodevelopmental disorders, Nathalie Holz, Stella Guldner, Julia Ernst, Frauke Ness -- Handheld devices 4 people on the spectrum: boosting self-esteem gaining independence, Luiz Perez de la Maza, Guadalupe Montero -- Using eCoaching to Promote Independent and Effective Functioning of Learners with NDDs, Laura Chezan,

Annemarie Horn -- Artificial Intelligence algorithms for social contexts, Serge Thill -- Social robotics and affective computing for children with special needs, Ana Paiva, Joana Campos -- Vocal and Digi-Social Biomarkers in neurodevelopmental health: Current Status, Promises, and Perils, Wamuyu Owotoki, Anninka Enseroth, Ruth N Mbugua, Peter Owotoki -- Digital interventions for attention deficit and hyperactivity disorders, Alexander Haege, Leonard Marten, Anna Kaiser, Konstantin Mechler -- Interactive computer-supported collaborative learning environments to assess the regulation of learning, Paula Ferreira, Ana Margarida Veiga Simão, Nádia Pereira, Aristides Ferreira, Sara Lopes, Diana Stilwell, Diogo Domingues -- Understanding moral disengagement in cyberbullying through serious games, Paula Ferreira, Aristides Ferreira, Sofia Francisco, Sara Lopes, Nádia Pereira, Ana Margarida Veiga Simão, Diana Stilwell, Diogo Domingues.

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#### Sommario/riassunto

This book is a comprehensive guide for researchers and professionals in special education and psychology. It delves into the world of technological tools for education and intervention, empowering readers to utilize evidence-based practices. With a focus on enhancing evaluation, intervention, and learning processes for children with special needs, the book's goal is to overcome obstacles and maximize the use of digital tools in schools. Through captivating insights and real-world applications into emerging technologies like social robots, eye-trackers, and digital applications, this book inspires professionals to embrace innovative approaches. Highlighting the potential of technology in transforming educational experiences for neurodiverse children, it offers a wealth of practical resources and knowledge. This book is an essential resource for researchers and professionals in special education and psychology, educators, psychologists, and anyone eager to leverage technology for children's development and well-being. .

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